Claims

1. A pharmaceutical composition for the treatment of acute pain by sublingual administration, comprising an essentially water-free, ordered mixture of microparticles of fentanyl or a pharmaceutically acceptable salt thereof adhered to the surfaces of carrier particles, said carrier particles being substantially larger than said microparticles of fentanyl and being essentially water-soluble, and a bioadhesion and/or mucoahesion promoting agent mainly adhered to the surfaces of said carrier particles.

2. A composition according to claim 1, comprising from 0.05 to 20 weight percent of fentanyl.

3. A composition according to claim 1 or 2, comprising from 0.05 to 5 weight percent of fentanyl, preferably then from 0.1 to 1 weight percent.

4. A composition according to any one of claims 1-3, wherein the particles of fentanyl have a weight based mean diameter of less than 10 µm.

5. A composition according to any one of claims 1-4, wherein the mean sieve diameter of the carrier particles is less than 750 µm, preferably then from 100 to 600 µm.

6. A composition according to any one of claims 1-5, wherein the carrier comprises a brittle material which will fragmentize easily when compressed.

7. A composition according to claim 1, wherein the carrier particles contain from 0.1 to 25 weight percent of the bio/mucoadhesion promoting agent, preferably then from 1 to 15 weight percent, based on the total composition.

8. A composition according to claim 7, wherein the bio/mucoadhesion promoting agent is selected from the group consisting of acrylic polymers, cellulose derivatives, natural polymers having mucoadhesive properties, and mixtures thereof.

9. A composition according to claim 8, wherein the bio/mucoadhesion promoting agent is selected from the group consisting of cellulose derivatives and comprising hydroxypropylmethyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, sodium carboxymethyl cellulose, methyl cellulose, ethyl hydroxyethyl cellulose, carboxymethyl cellulose, microcrystalline cellulose and modified cellulose gum; crosscaramellose; modified starch; acrylic polymers comprising carbomer and its derivatives; polyethylene oxide; chitosan; gelatin; sodium alginate; pectin; scleroglucan; xanthan gum; guar gum; poly-co-(methyl vinyl ether-maleic anhydride); and mixtures thereof.

10. A composition according to any one of claims 1-9, further comprising a pharmaceutically acceptable surfactant in a finely dispersed form and intimately mixed with the fentanyl.

11. A composition according to claim 10, wherein the surfactant is present in an amount from 0.5 to 5 weight percent of the composition, preferably then 0.5 to 3 weight percent.

12. A composition according to claim 10 or 11, wherein the surfactant is selected from the group consisting of sodium lauryl sulfate, polysorbates, bile acid salts and mixtures thereof.

13. A composition according to any one of claims 1-12, wherein the carrier particles comprise a water-soluble, pharmaceutically acceptable carbohydrate and/or inorganic salt.

14. A composition according to claim 13, wherein the carrier particles comprise one or more of the materials mannitol, lactose, calcium phosphate and sugar.

15. A composition according to any one of claims 1-14, wherein the carrier particles contain at least one pharmaceutical disintegrating agent promoting the dispersion of the microparticles of fentanyl over the sublingual mucosa.

16. A composition according to claim 15, wherein the disintegrating agent is selected from the group consisting of cross-linked polyvinylpyrrolidone, carboxymethyl starch, natural starch, microcrystalline cellulose, cellulose gum, and mixtures thereof.

17. A composition according to claim 15 or 16, wherein the disintegrating agent is present in an amount from 1 to 10 weight percent of the composition.

18. The use of fentanyl or a pharmaceutically acceptable salt thereof in microparticle form for the preparation of an essentially water-free pharmaceutical composition for the treatment of acute pain by sublingual administration, wherein the microparticles are adhered to the surfaces of carrier particles which are substantially larger than said microparticles and are essentially water-soluble, and a bioadhesion and/or mucoadhesion promoting agent is mainly adhered to the surfaces of said carrier particles.

19. A method for the treatment of acute pain, wherein to an individual afflicted with acute pain is administered sublingually at least one dose unit of an essentially water-free pharmaceutical composition containing an effective amount of fentanyl or a pharmaceutically acceptable salt thereof in the form of microparticles adhered to the surfaces of carrier particles, which are substantially larger than said microparticles and are essentially water-soluble, and a bioadhesion and/or mucoadhesion promoting agent mainly adhered to the surfaces of said carrier particles.

20. A method according to claim 19, wherein the fentanyl is adminstered in an amount from 0.05 to 20 mg, preferably then from 0.1 to 5 mg, per dose unit.